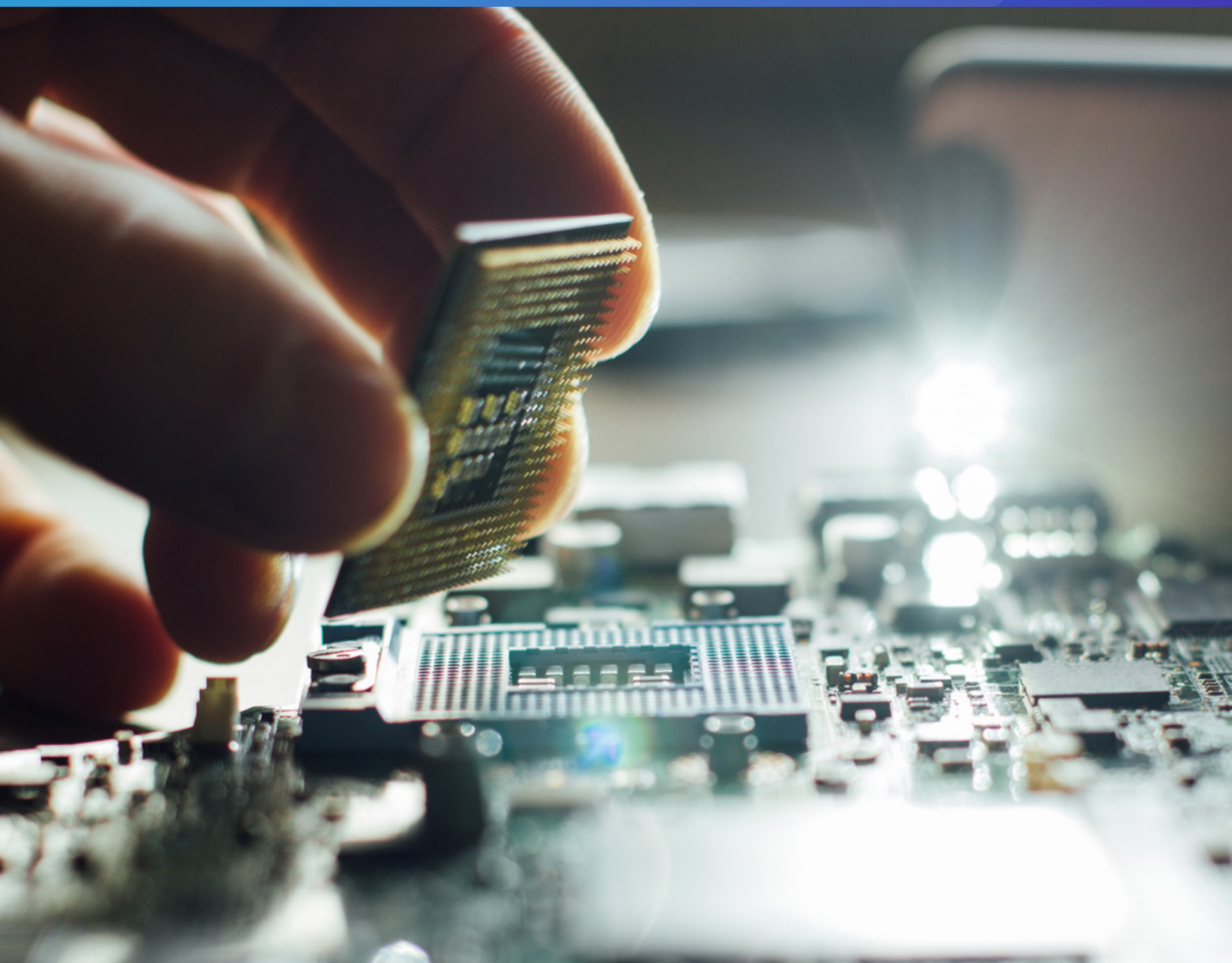
PartAnalytics

Electronic Component Shortages Aren't Going Anywhere: What's Your Plan?



Shortages continue to be one of the foremost concerns for most organizations in both the electronics and electronic component manufacturing sectors. These periodic disruptions in the supply chain create significant challenges for OEMs and EMSs, which translates to hurdles as it pertains to keeping the production lines running. Unfortunately, there is no sign of the global electronic shortfall being resolved in the near future.

Many teams have found that trying to use their previous sourcing & procurement methods isn't working as well in a marketplace riddled with shortages. Knowing how best to handle and effectively mitigate component shortages is not only a crucial element of supply management, but it can make or break an entire organization.

The cycles of the pandemic haven't been kind to teams that are overburdened & at risk of severe burn-out. Every new variant leads to more shutdowns and delays. Ideally, we'll see an end to the current issues within the next 12-24 months, but it's likely that your team will need to adapt your methods, processes, and sourcing workflows in order to anticipate future disruptions.

HOW DID WE GET HERE? A QUICK BACKSTORY ON THE CURRENT SHORTAGES

Obviously, the pandemic has been a massive influence on our current shortage situation, but to really understand this cycle, we need to look back several years to early 2018. At this time, most of the manufacturers were failing to invest enough in their manufacturing capacity. This translated to a significant gap between supply and demand.

By the end of 2019, there was a ramp-up in investment which led to an increase in production. This was good tidings, with most industry experts pointing out that going into 2020, OEMs would finally start receiving the components and materials they ordered.

Unfortunately, 2020 saw the emergence of the COVID-19 pandemic, which further complicated the supply chain. When key production zones were put on lockdown, this exacerbated supply issues. Going into 2021, economies restarted, which saw a rise in demand for components, yet supply could simply not fulfill that demand. A report from ElectronicB2B indicates that demand in the electronic component market is expected to increase by 11% from 2020 to 2027.

Because of the underinvestments and disruptions over the past 4 years, component shortages have gone all the way upstream to the factory equipment. Governments and companies may be investing billions to build new manufacturing capacity, but the machines they need to make electronic components/ semiconductors in those factories are facing supply chain challenges & component shortages as well.

REASONS ELECTRONIC COMPONENT SHORTAGES HAPPEN

Even after this pandemic winds down and we start to see more inventory hit the market, this isn't as much of a one-time phenomenon as you'd think. To effectively anticipate and plan for inevitable electronic component shortages, let's talk about the reality of these disruptors openly:

LOCAL & GLOBAL PANDEMICS

Perhaps it's unsurprising that this is first on the list, given the global pandemic we've all experienced most recently. But, even local pandemics can disrupt supply chains, leading to global shortages. The world has experienced an increasing number of localized pandemics that introduce the risk of having single suppliers or the entire supply chains located within the hot zones fail to meet demand. COVID-19 is somewhat unique in that it has been a global issue that has caused systemic shifts within the supply chain.

When COVID-19 hit, component supply chain market capacity shrunk significantly. For starters, the pandemic's epicenter, Wuhan, China, where a lot of electronic and mechanical suppliers are situated. When the whole city went on lockdown, factories could no longer produce at full capacity, if at all. As the virus spread throughout China and to the rest of the world, so did the component shortages. Key industry players in Malaysia, the Philippines, and Indonesia could no longer produce or ship parts. The consequence was that OEMs could not manufacture their products either.

In retrospect, the pandemic clogged entire supply chains. Flexibility and inventory seem to be sucked out of the market. An instance where we see this impact is where the lead time for high-end semiconductors seemed to double from the original 18 weeks to 36 weeks.

As economies have opened up, we should see a shift back to pre-pandemic operations. Still, it wouldn't be too far-fetched to point out that the pandemic-era problems are likely to persist. For instance, government regulation mandating temporary shutdowns or reduced workforces creates further labor shortages that tighten operations in companies producing electronic components and those that are part of the component ecosystem.

Experts point out that the pandemic will continue to have an impact on the prices and lead times of these components going forward. The pandemic disrupted operations at some key mines worldwide, which translates to an increase in raw materials costs.

NEW TECHNOLOGY + IOT EXPANSION

Recent market conditions include a perpetual release of new technologies as well as a general increase in the rapid expansion of IoT – the amount of electronic components in products in just about every industry keeps increasing. This ever-changing technology is perpetually shaping the electronic industry at a faster rate than almost looks impossible to catch up with.

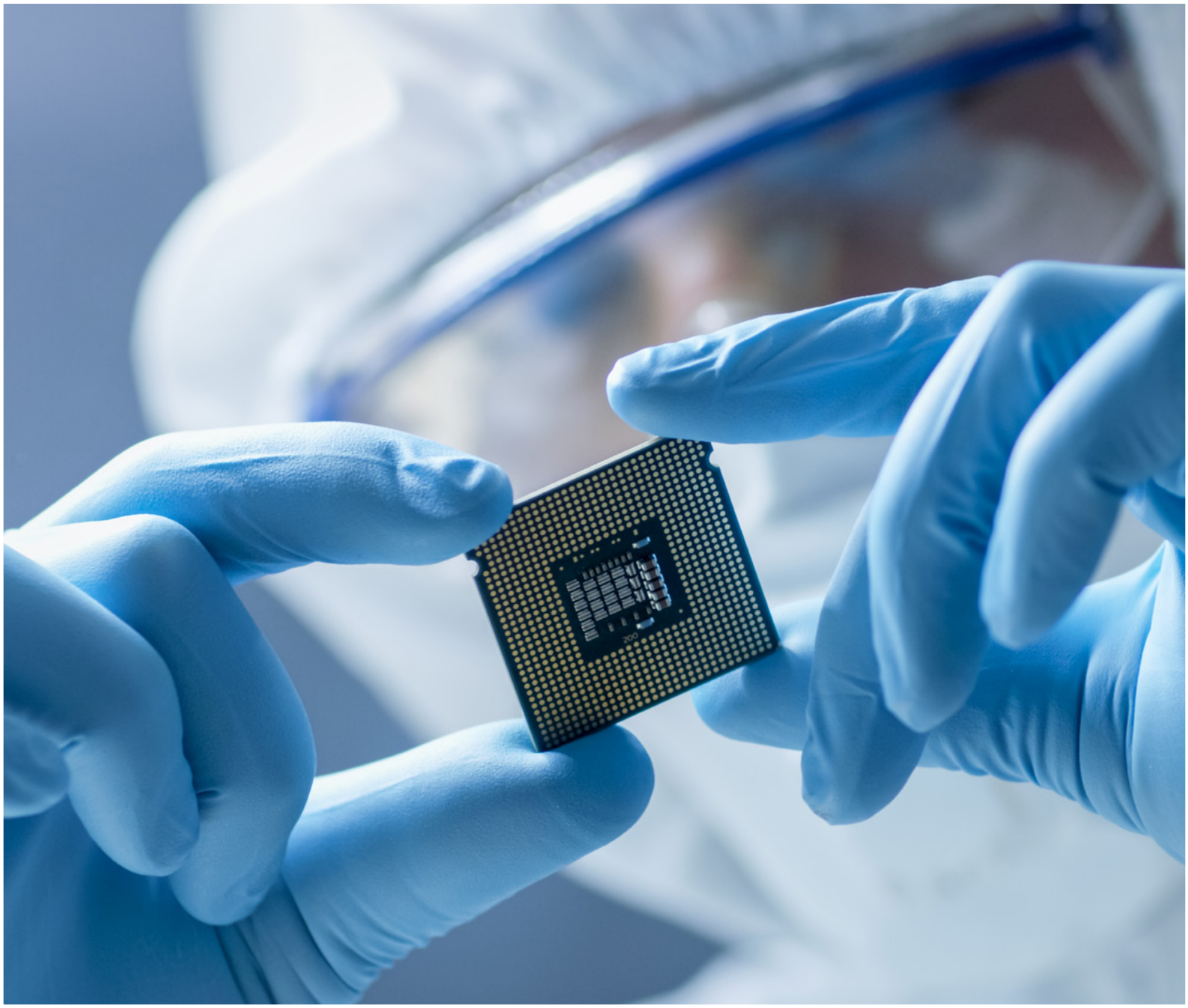
These new technologies are critical, and we're now seeing just how significant the demand for MLCCs has been in the mobile handsets and automotive sectors. This translates to severe pressure on the supply chain as gadgets that previously needed a limited number of components have now quadrupled their need for individual pieces.

For instance, electric vehicles now require four times more MLCCs than the traditional automobile. Overall, we are seeing a greater demand for MLCC supply in the market.

COMPONENT MANUFACTURERS ARE SHIFTING PRODUCTION TO HIGH-MARGIN PRODUCTS

Historically, manufacturers of electronic components have enjoyed somewhat of a monopoly, and as such, they control the market. This dominance has been detrimental in that instead of these manufacturers expanding their market share with broad product lines, these major players have shifted to seeking higher margins and greater sustainability.

This means that consumers looking for low-and medium-priced products are no longer their target market. In their place are auto-rated and specialty industry-related products with higher margins. When these manufacturers discontinue the production of one component in favor of another, the impact is felt by manufacturers that rely on these components for the production of their products.



HOW DO YOU PREPARE FOR THE NEXT ELECTRONIC COMPONENT SHORTAGE?

Overall, relief from electronic component shortages seems to be inching further towards resolution. This is a huge relief. Still, there are ways you can and should prepare for the next shortage since component shortages aren't going anywhere. Strategies you could consider include:

CLOSELY MONITORING TECHNOLOGY TRENDS AND MARKET UPDATES

A shrewd supply management professional needs to stay up-to-date with new technology trends. In doing so, it becomes possible to foreshadow any potential future shortages. When armed with this information, it is possible to be more strategic when sourcing components. Invest in publications where market watchers predict trends in availability. By being aware of these sentiments on discrepancies in the supply and demand of electronic components, you should be able to avoid massively debilitating scarcity.

Industry experts point out the need to include supply chain experts' recommendations when designing new products. These experts are instrumental in that they can successfully help with avoiding potential supply chain nightmares.

CREATE A MORE AGGRESSIVE VENDOR MANAGED INVENTORY PLAN FOR CRITICAL COMPONENTS & SHORTAGES

OEMs already deploy VMI (Vendor Managed Inventory) and buffer stock (20-30%) to address demand fluctuations. But the problem is that's not enough in a situation like the one we're facing today. Though OEMs could store more buffer stock, the constraint there is the cost of holding onto that inventory.

Typically, this goes against the LEAN/just-in-time inventory principles that most OEMs traditionally prefer to use in supply management. Many organizations and finance teams are re-evaluating these traditional approaches to consider the ramifications of just-in-time/low inventory. They're now forced/open to holding more inventory just to be able to ship products out and meet their obligations to customers.

We're also starting to see organizations using modern and new technology solutions to monitor/predict potential lead time changes and have an agile/resilient supply management team that can react quickly to these shocks.

DIVERSIFYING YOUR COMPONENT SOURCES & SUPPLIERS

Suppose the part you require goes obsolete or your supply simply drops the ball during delivery. In that case, you end up having your entire supply chain go into chaos.

Relying on just a single source for all of your electronic components supply is a perilous position to be in. To prevent complete halting of production in the event of shortages, it would be prudent for the OEM or EMS provider to have a second source on your Approved Vendor List (AVL). This comes in particularly handy if the component is highly-specialized or even customized.

Overall, you want to avoid last-minute rushes, as doing so could lead to improperly vetting suppliers. The consequence is the possible introduction of inferior electronic components or hardware into your supply chain, effectively tainting your reputation.

SOURCE THE OPEN MARKET FOR ALTERNATE/ CROSS-PART OPTIONS

Granted, sourcing the open market for options can be a cause of concern to manufacturers, especially if your approach to date has typically been "just get more people calling around." You end up with entire teams deployed to find a single part. The execution of these searches has a significant revenue impact that necessitates a reexamination of the entire system.

Thankfully, there are more modern solutions on the market (including Part Analytics) that offer the ability to identify alternate parts that are not just acceptable, but available and make recommendations to the product engineer/designer. We're starting to see teams making the shift to design-for-supply by granting the product team access to these tech tools.

Ultimately, the cost of the product pales in comparison to the ability to get products built and shipped to customers faster than your competitors.

If you are interested in learning how supply management software can help you better navigate electronic component shortages, consider scheduling a demo to see how you can provide component availability insights to your entire organization both for shortages lists and product/product line BOMs.

PartAnalytics

ABOUT US

We're here to make supply management for direct materials less painful for electronics suppliers & manufacturers.

We are paving the way toward a future with simple, effective, and straightforward collaboration between electronic equipment manufacturers and suppliers. In that pursuit, we're creating a comprehensive & standardized source of information for supply management.

We draw on deep expertise in sourcing and product design to help electronics equipment and component manufacturers find available parts, manage costs, and limit overall risk to their supply chain with intuitive, easy-to-use software tools.

Automate direct materials sourcing, procurement & PLM processes with AI-powered software that will find available parts, monitor market changes, and provide product cost, risk, spend & supply insights for everyone on your team.

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